# **2022 American Community Survey Content Test Results**

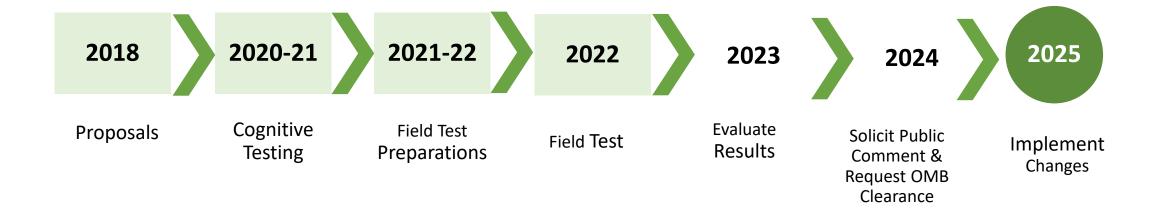
## **National Advisory Committee**

November 16, 2023

Joan Hill Decennial Statistical Studies Division U.S. Census Bureau



## **2022 Content Test Process and Timeline**





# **Experimental Design**

Topic	Control Treatment	Test Treatment	Roster Test Treatment
<b>Household Roster</b>	Production	Production	Test Version
Sewer (NEW)	Test Version	Test Version	Test Version
<b>Electric Vehicles (NEW)</b>	Test Version 1	Test Version 2	Test Version 1
Solar Panels (NEW)	Test Version	Test Version	Test Version
SNAP	Production	Test Version	Test Version <sup>†</sup>
<b>Educational Attainment</b>	Production	Test Version	Production
<b>Health Insurance Coverage</b>	Production	Test Version 1	Test Version 2
Disability	Production	Test Version	Production
Labor Force	Production	Test Version 1	Test Version 2
Income	Production	Test Version 1	Test Version 2

<sup>+</sup> The SNAP Test Version was in both test treatments to align with Labor Force and Income that also have a reference period change to the previous calendar year.

- BLUE topics had two versions tested.
- **RED** topics had <u>three</u> versions tested.



# **Analysis Metrics for Content Test Topics**

Benchmarks

- Item Missing Data Rates
- Response Distributions
- Response Reliability Gross Difference Rate (GDR) and Index of Inconsistency (IOI)
- Other Metrics (Topic-Specific)



## Household Roster

## **Control**

### How many people are living or staying at this address?

- INCLUDE everyone who is living or staying here for more than 2 months.
- INCLUDE yourself if you are living here for more than 2 months.
- INCLUDE anyone else staying here who does not have another place to stay, even if they are here for 2 months or less.
- DO NOT INCLUDE anyone who is living somewhere else for more than 2 months, such as a college student living away or someone in the Armed Forces on deployment.

### Number of people



## **Test Version**

## How many people, including yourself, live or stay at this address?

#### INCLUDE ...

- ✓ anyone not related to you, like roommates and other families.
- ✓ babies and children, related or unrelated, including grandchildren and foster children.
- ✓ everyone staying here now who has no other place to stay.

DO NOT INCLUDE anyone living somewhere else, such as...

- X a college student living away.
- X someone in the Armed Forces on deployment.

#### Number of people





## **Household Roster Results**

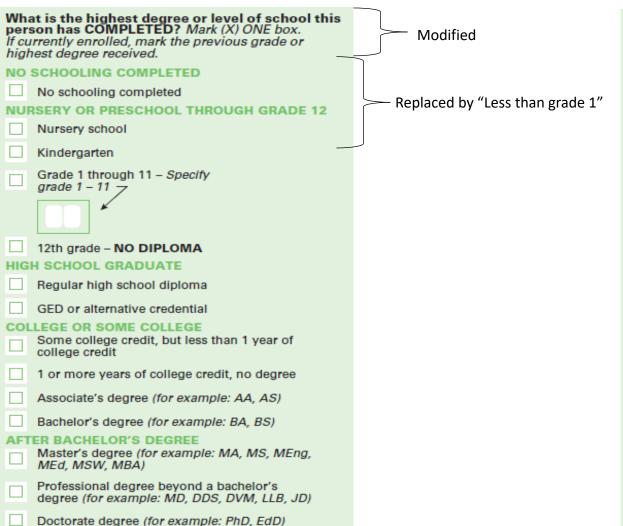
Measure	Version That Performed Better
Young Children 0-4 on Final Roster	No significant difference
Households with Roster Mismatches	No significant difference
People with Tenuous Connection to Household	No significant difference
Complex Households	Test Version
Count Discrepancies (mail mode)	Test Version
Complete Item Missing Data Rate (mail mode)	Test Version
People Originally Added then Kept on Final Roster	Test Version

Recommend moving forward with the Test Version.



## **Educational Attainment**

## **Control**



### **Test Version**

What is the highest grade of school or degree this person has COMPLETED? If currently enrolled, select the previous grade or highest degree received.  Mark (X) ONE box.
LESS THAN GRADE 1
Less than grade 1
GRADE 1 THROUGH GRADE 12
Grade 1 through 11 – Specify grade 1 – 11 –
12th grade - NO DIPLOMA
HIGH SCHOOL GRADUATE
Regular high school diploma
GED or alternative credential
COLLEGE OR SOME COLLEGE
Some college credit, but less than 1 year of college credit
1 or more years of college credit, no degree
Associate's degree (for example: AA, AS)
Bachelor's degree (for example: BA, BS)
AFTER BACHELOR'S DEGREE
Master's degree (for example: MA, MS, MEng, MEd, MSW, MBA)
Professional degree beyond a bachelor's degree (for example: MD, DDS, DVM, LLB, JD)
Doctorate degree (for example: PhD, EdD)



## **Educational Attainment Results**

Measure	Version That Performed Better
People with Educational Attainment less than grade 1	Test Version
Nominally Closer to CPS ASEC for less than grade 1	Test Version
Item Missing Data Rate	Control
Gross Difference Rate (GDR) for less then grade 1	Test Version

Recommend moving forward with the Test Version.



## Health Insurance Coverage

#### **Control**

Is this person CURRENTLY covered by any of the following types of health insurance or health coverage plans? Mark "Yes" or "No" for EACH type of coverage in items a - h. Yes No. a. Insurance through a current or former employer or union (of this person or another family member) b. Insurance purchased directly from an insurance company (by this person or another family member) c. Medicare, for people 65 and older, or people with certain disabilities d. Medicaid, Medical Assistance, or any kind of government-assistance plan for those with low incomes or a disability e. TRICARE or other military health care f. VA (enrolled for VA health care) g. Indian Health Service h. Any other type of health insurance 

#### **Test Version 1**

#### Is this person CURRENTLY covered by any of the following types of health insurance or health coverage plans? Do NOT include plans that cover only one type of service, such as dental, drug, or vision plans. Mark "Yes" or "No" for EACH type of coverage in items a – h. a. Insurance through a current or former Yes No employer, union, or professional association (of this person or another family member) b. Medicare, for people 65 and older, or people with certain disabilities c. Medicaid, Children's Health Insurance Program (CHIP), or any kind of government-assistance plan for those with low incomes or a disability d. Insurance purchased directly from an insurance company; a broker; or a State or Federal Marketplace, such as Healthcare.gov e. Veteran's health care (enrolled for VA) f. TRICARE or other military health care g. Indian Health Service h. Any other type of health insurance

#### **Test Version 2**

follo	nis person CURRENTLY covered by any of the owing types of health insurance or health erage plans? Do NOT include plans that cover one type of service, such as dental, drug, or vision as.
YES	s, INSURED
Mar	k (X) for all that apply.
	Insurance through a current or former employer, union, or professional association (of this person or another family member)
	Medicare, for people 65 and older, or people with certain disabilities
	Medicaid, Children's Health Insurance Program (CHIP), or any kind of government-assistance plan for those with low incomes or a disability
	Insurance purchased directly from an insurance company; a broker; or a State or Federal Marketplace such as Healthcare.gov
	Veteran's health care (enrolled for VA)
	TRICARE or other military health care
	Indian Health Service
	Any other type of health insurance or health coverage plan – <i>Specify</i>
NO,	UNINSURED
	No health insurance or health coverage plan

DRB Clearance Number: CBDRB-FY23-ACSO003-B0073

# Results for Test Version 1 vs. Test Version 2 Health Insurance Coverage

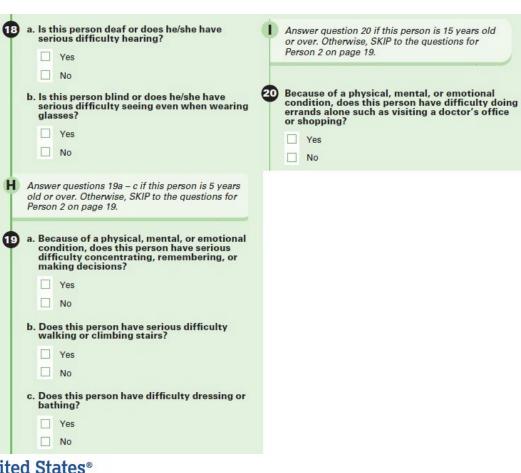
Measure	Version That Performed Better
Complete Item Missing Data Rate	No significant difference
Reliability for Uninsured	Test Version 2
Index of Inconsistency (IOI) for VA Coverage (CAPI only)	Test Version 1
Any Coverage Rate	No significant difference
Medicaid (mail only)	Test Version 1
Multiple Coverage	Test Version 2
Write-Ins	Test Version 2



**Recommend moving forward with the Test Version 2.** 

# Disability

#### **Control**



#### **Test Version**

a. Does this person have difficulty seeing, even if wearing glasses?	b. Does this person have difficulty remembering or concentrating?
☐ No difficulty	☐ No difficulty
☐ Some difficulty	Some difficulty
☐ A lot of difficulty	☐ A lot of difficulty
Cannot do at all	Cannot do at all
b. Does this person have difficulty hearing, even if using a hearing aid?	c. Does this person have difficulty with self-care, such as washing all over or dressing?
☐ No difficulty	No difficulty
Some difficulty	Some difficulty
☐ A lot of difficulty	☐ A lot of difficulty
Cannot do at all	Cannot do at all
H Answer questions 19a – d if this person is 5 years old or over. Otherwise, SKIP to the questions for Person 2 on page 19.  19 a. Does this person have difficulty walking or climbing steps?  No difficulty  Some difficulty  A lot of difficulty  Cannot do at all	d. Using his or her usual language, does this person have difficulty communicating, for example understanding or being understood?  No difficulty Some difficulty A lot of difficulty Cannot do at all  Answer question 20 if this person is 15 years old or over. Otherwise, SKIP to the questions for Person 2 on page 19.
	Because of a physical, mental, or emotional condition, does this person have difficulty doing errands alone such as visiting a doctor's office or shopping?  No difficulty  Some difficulty  A lot of difficulty  Cannot do at all



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## **Disability Results**

- Test Version showed significantly higher complete item missing rate of one percentage point, likely due to additional question and response categories.
- Test Version generally had mixed results for response reliability but generally lower GDRs across modes and types for Test Version.
- The percent with disability based on the WG Definition 1 was significantly lower in the Test treatment (8.1%) compared to Control treatment (13.9%) whereas Definition 2 yielded a significantly higher percentage (31.7%).
  - -- Revised Disability Definition 1 would not be comparable to the current ACS measure.

Definition 1 = "A lot of difficulty" or "Cannot do at all" whereas Definition 2 also includes "Some difficulty"

Recommend moving forward with Test Version and primarily use Definition 1.



## Income

#### **Control**

#### INCOME IN THE PAST 12 MONTHS d. Social Security or Railroad Retirement. Mark (X) the "Yes" box for each type of income this TOTAL AMOUNT during the PAST 12 MONTHS. (NOTE: The "past 12 months" is the period from ☐ Yes → TOTAL AMOUNT for past today's date one year ago up through today.) Mark (X) the "No" box to show types of income e. Supplemental Security Income (SSI). NOT received. If net income was a loss, mark the "Loss" box to the right of the dollar amount. No TOTAL AMOUNT for past For income received jointly, report the appropriate 12 months share for each person - or, if that's not possible, report the whole amount for only one person and f. Any public assistance or welfare payments mark the "No" box for the other person. from the state or local welfare office. a. Wages, salary, commissions, bonuses, or tips Yes → S from all jobs. Report amount before deductions for taxes, bonds, dues, or other items. ☐ No TOTAL AMOUNT for past 12 months ☐ Yes → g. Retirement income, pensions, survivor or disability income. Include income from a previous employer or union, or any regular withdrawals or TOTAL AMOUNT for past distributions from IRA, Roth IRA, 401(k), 403(b), or other accounts specifically designed for retirement. b. Self-employment income from own nonfarm businesses or farm businesses, including Do not include Social Security. proprietorships and partnerships. Report NET income after business expenses. Yes → S TOTAL AMOUNT for past TOTAL AMOUNT for past h. Any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support or alimony. Do NOT include lump sum payments such c. Interest, dividends, net rental income, royalty income, or income from estates and trusts. as money from an inheritance or the sale of a home. Report even small amounts credited to an account. ☐ Yes → No TOTAL AMOUNT for past TOTAL AMOUNT for past 12 months What was this person's total income during the PAST 12 MONTHS? Add entries in questions 43a to 43h; subtract any losses. If net income was a loss, enter the amount and mark (X) the "Loss" box next to the

OR

Loss

TOTAL AMOUNT for past

## **Test Version 1**

# Wording and Reference Period Change INCOME IN 2021 Report ALL types of income received, TAXABLE AND NONTAXABLE, from January 1, 2021 to December 31, 2021. d. Rental income. Report NET income after expenses. If not rental income was a loss, mark (X) the "Loss" box next to the dollar amount.

ÖNTAXABÉÉ, from January 1, 2021 to December 31, 21.	box next to the dollar amount.
ark (X) the "Yes" box for each type of income this rson received, and give your best estimate of the TAL AMOUNT.	Yes → \$ .00       No TOTAL AMOUNT for 2021   Loss
ark (X) the "No" box for each type of income NOT seived.	e. Social Security or Railroad Retirement.
NEAK-EVEN NET INCOME: For break-evens, mark (X) "Yes" box and write in \$0 for the TOTAL AMOUNT.	☐ Yes → \$ .00 ☐ No TOTAL AMOUNT for 2021
COME RECEIVED JOINTLY: Report the appropriate are for each person – or, if that's not possible, report	f. Supplemental Security Income (SSI).
e whole amount for only one person and mark the lo" box for the other person.	□ Yes → \$ .00
Wages, salary, commissions, bonuses, or tips from all jobs. Report amount before deductions for	☐ No TOTAL AMOUNT for 2021
taxes, bonds, dues, or other items.	g. Any financial assistance from the state or local welfare office. Do NOT include SNAP (Food Stamps
☐ Yes → \$ ,	unemployment compensation, or non-cash benefits like energy or housing assistance.
No TOTAL AMOUNT for 2021	☐ Yes → \$ .00
Self-employment income, including work pald for in cash. Report income from own businesses (farm or non-farm), including proprietorships and partnerships. Report NET income after business exponses. If not income was a loss, mark (X) the "Loss" box next to the dollar amount.    Yes >	No TOTAL AMOUNT for 2021  h. Retirement income, pensions, survivor, or disability income. Do NOT include Social Security. INCLUDE income from a previous employer or union and any regular withdrawals or distributions from IRA. Roth IRA, 401(k), 403(b), or other accounts specifically designed for refirement.
Interest, dividends, royalty income, or income from estates and trusts. Report even small amounts credited to an account.	No TOTAL AMOUNT for 2021  i. Any other sources of income received regularly
☐ Yes → \$ .00	such as Veterans' (VA) payments, unemploymen compensation, child support or alimony. Do NOT include lump sum payments such as money
□ No TOTAL AMOUNT for 2021	from an inheritance or the sale of a home.
	☐ Yes → \$ .00
	No TOTAL AMOUNT for 2021
	Including all types of income, what was this person's total income in 2021? Add entries in questions 4da to 4di; subtract any losses. If net income was a loss, enter the amount and mark (X) the "Loss" box next to the dollar amount.
	OR S 1.00 Loss

#### **Test Version 2**

#### Reference Period Change

INCOME IN 2021	
Mark (X) the "Yes" box for each type of income this person received from January 1, 2021 to December 31, 2021. Give your best estimate of the TOTAL AMOUNT.	d. Social Security or Railroad Retirement.  ☐ Yes → \$ .00
Mark (X) the "No" box to show types of income NOT received.	No TOTAL AMOUNT for 2021
If net income was a loss, mark the "Loss" box to the right of the dollar amount.	e. Supplemental Security Income (SSI).
For income received jointly, report the appropriate share for each person – or, if that's not possible, report the whole amount for only one person and mark the "No" box for the other person.	☐ Yes → \$
a. Wages, salary, commissions, bonuses, or tips from all jobs. Report amount before deductions for taxes, bonds, dues, or other items.  Yes > \$	f. Any public assistance or welfare payments from the state or local welfare office.  ☐ Yes → \$
b. Self-employment income from own nonfarm businesses or farm businesses, including proprietorships and partnerships. Report NET income after business expenses.  Yes > \$	g. Retirement income, pensions, survivor or disability income, include income from a previous employer or union, or any regular withdrawals or distributions from IRA, Roth IRA, 401(IR), 403(b), or other accounts specifically designed for retirement. Do not include Social Security.  Yes → \$ 0.00  No TOTAL AMOUNT for 2021
c. Interest, dividends, net rental income, royalty income, or income from estates and trusts.  Report even small amounts credited to an account.  Yes > \$	h. Any other sources of income received regularly such as Veterans' (VA) payments, unemployment compensation, child support or allimony. Do NOT include lump sum payments such as money from an inheritance or the sale of a home.  Yes > \$
	losses. If net income was a loss, enter the amount and mark (X) the "Loss" box next to the dollar amount.  OR None TOTAL AMOUNT for 2021



# Results for Test Version 1 vs. Test Version 2 Income

Measure	Version That Performed Better
Aggregate Reported Income	No significant difference
Break-Even Amounts for Self-Employment	Test Version 1
Missing Data Rate for Interest Income Amount	Test Version 1
Median Income by Occupation	No significant difference
GDR/IOI self-employment income recipiency	Test Version 2
Net Difference Rate for Public Assistance Income	No significant difference

Test Version 1 performed well but upcoming administrative data analysis will be key to a future recommendation.



## **SNAP**

#### Control

IN THE PAST 12 MONTHS, did you or any member of this household receive benefits from the Food Stamp Program or SNAP (the Supplemental Nutrition Assistance Program)? Do NOT include WIC, the School Lunch Program, or assistance from food banks.

Yes



#### **Test Version**

In 2021, did you or any member of this household receive benefits from the Food Stamp Program or SNAP (the Supplemental Nutrition Assistance Program)? Do NOT include WIC, the School Lunch Program, or assistance from food banks.





## **SNAP Results**

-- No significant differences between the Test Version and Control for percentage of households receiving SNAP benefits and missing data rates.

Benchmark	SNAP Receipt Rate (SE)
2022 ACS Content Test - Test	10.9 (0.2)
2022 ACS Content Test - Control	10.7 (0.3)
2022 CPS ASEC (CY 2021)	12.7 (n/a)
2022 Food and Nutrition Service counts	16.9 (n/a)
2021 ACS	12.4 (0.1)
2019 ACS	10.7 (0.1)

Source: U.S. Census Bureau, 2022 ACS Content Test (DRB No. CBDRB-FY23-ACSO003-B0059), 2019, and 2021 ACS 1-year estimates, 2022 CPS ASEC. Food and Drug Administration, 2022 Food and Nutrition Service Counts.

Test Version performed well but the SNAP recommendation is dependent on the reference period used for the ACS Income questions.



# Labor Force

## **Control**

When did this person last work, even for a few days?		
Within the past 12 months		
1 to 5 years ago → SKIP to M		
Over 5 years ago or never worked → SKIP to question 43		
<ul> <li>a. During the PAST 12 MONTHS (52 weeks), did this person work EVERY week? Count paid vacation, paid sick leave, and military service as work.</li> </ul>		
Yes → SKIP to question 41		
No		
b. During the PAST 12 MONTHS (52 weeks), how many WEEKS did this person work? Include paid time off and include weeks when the person only worked for a few hours.  Weeks		
b. During the PAST 12 MONTHS (52 weeks), how many WEEKS did this person work? Include paid time off and include weeks when the person only worked for a few hours.		
b. During the PAST 12 MONTHS (52 weeks), how many WEEKS did this person work? Include paid time off and include weeks when the person only worked for a few hours.		



## **Test Version 1**

39	When did this person last work for pay, even for a few days?
	Within the past 12 months
	1 to 5 years ago
	Over 5 years ago or never worked → SKIP to question 44
40	In 2021, did this person work for pay, even for a few days?
	Yes
	No → SKIP to question 44
	NOTE: For question 41a and b, include as WORK:  ✓ all jobs for pay ✓ paid vacation ✓ paid sick leave ✓ military service
3	a. In 2021 (52 weeks), did this person work EVERY week? Remember to include paid vacation and paid sick leave as work.
	Yes → SKIP to question 42
	No
	b. In 2021 (52 weeks), how many WEEKS did this person work for at least one day? Include weeks when this person only worked for a few hours.  Weeks
42	In 2021, for the weeks worked, how many HOURS did this person usually work each WEEK? Include all jobs for pay and military service.  Usual hours worked each WEEK
Cle	arance Number: CBDRB-FY23-ACSO003-B0073

## **Test Version 2**

3	When did this person last work for pay, even for a few days?
1	Within the past 12 months
1	1 to 5 years ago
	Over 5 years ago or never worked → SKIP to question 44
4	In 2021, did this person work for pay, even for a few days?
1	Yes
	No → SKIP to question 44
4	a. In 2021 (52 weeks), did this person work EVERY week? Count paid vacation, paid sick leave, and military service as work. Include all jobs for pay.
1	Yes → SKIP to question 42
	No
	b. In 2021 (52 weeks), how many WEEKS did this person work for at least one day? Include weeks when this person only worked for a few hours. Include all jobs for pay. Count paid vacation, paid sick leave, and military service as work.  Weeks
4	In 2021, for the weeks worked, how many HOURS did this person usually work each WEEK? Include all jobs for pay and military service.
	Usual hours worked each WEEK

## **Labor Force Results**

- The Test Versions had a combined 2022 employment-to-pop ratio of 62.0% which nominally compares to the CPS ASEC ratio of 62.9%.
- Test Version 1 item missing rates for internet and mail were either lower or not significantly different compared to Control.
- Test Version 1 had higher reliability for several categories than the Control.
- For the mail instrument, Test Version 2 had lower item missing data rates compared to Test Version 1, and no statistical differences were observed in the response distributions between the two treatments

Recommend moving forward with the Test Version 2 mail instrument without new reference period.

Instructional changes recommended for other modes but reference period change is pending Administrative Data Analysis.



# Sewer (new)

## **Test Version**

Is this house, apartment, or mobile home connected to a public sewer?		
	Yes, connected to public sewer	
	No, connected to septic tank	
	No, use other type of system	



# Sewer/Septic Results

- The Test Version had a nominally lower percentage of households connected to a public sewer (77.0%) than the 2021 AHS (84.5%).
- The difference in overall item missingness between Sewer and the Telephone item was less than a percentage point.
- Public Sewer and Septic Tank responses both had low levels of inconsistency overall.

Recommend adopting the Sewer Test Version.



# Electric Vehicles (new)

## **Test Version 1**

Are any of the following types of electric vehicles kept at home for use by members of this household?		
a. A plug-in electric vehicle?		
		Yes
		No
b. A hybrid electric vehicle?		
		Yes
		No

## **Test Version 2**

Do you or any member of this household own or lease an electric vehicle? Include both all-electric and plug-in hybrid electric vehicles.		
		Yes
		No



## **Electric Vehicle Results**

Measure	Version That Performed Better	
Rate of Plug-In Electric Vehicle Ownership	Test Version 2	
Index of Inconsistency (IOI)  No significant difference		
Complete Item Missing Data Rate	Test Version 2	

Recommend moving forward with Test Version 2.



# Solar Panels (new)

## **Test Version**

Does this house, apartment, or mobile home use solar panels that generate electricity?		
	Yes	
	No	



## **Solar Panels Results**

- The Test Version had a nominally higher percentage of housing units with solar panels (4.8%) than the 2021 AHS (3.8%).
- The solar panel item missing data rate for the Test Version was relatively small (2.8%); nominally higher than the 2021 AHS missing rate (0.2%).
- The self-response solar panel reports had lower levels of inconsistency compared to interviewer-administered.

Recommend adopting the Solar Panels Test Version.



# **Recommendations Summary**

Topic	Implement Changes?	Notes
Roster	Yes	
<b>Educational Attainment</b>	Yes	
Health Insurance Coverage	Yes, Version 2	Version 2 on paper is the "Mark all that apply" approach.
Disability	Yes	
Income	No	Evaluate instruction changes with administrative data analysis and make a final recommendation next fall.  Reference period implementation pending administrative data use in production.
SNAP	No	Reference period implementation pending.
Labor Force	Partial	Instruction changes can proceed; Reference period implementation pending.
Sewer (new)	Yes	
Electric Vehicle (new)	Yes, Version 2	
Solar Panels (new)	Yes	



Note: The Census Bureau's recommendations will feed into decisions made in consultation with OMB.

# Questions for the NAC

 Does the Committee have any specific recommendations for increasing response to the Content Followup reinterview, which was conducted via telephone to measure response error?

 Does the Committee have any recommendations for additional metrics that would be useful for evaluating quality during content testing?

